

Work Order ID 75948

\*75948\*

Page 1

November-02-11 8:34:51 AM

Item ID: D206-667-101

Accept

\*N900040100\*

Setup Start \*NS1\*

Revision ID:

Stop \*NS2\*

Item Name: Crosstube Fwd

Start Date: 02/11/2011 Start Qty: 1.00

\*1\*

Cust Item ID:

Required Date: 22/11/2011 Req'd Qty: 1.00

\*1\*

Customer:

Reference:

Approvals: Process Plan: M.L.J

Date: 11/11/08

Tooling:

Date:

Run Start \*NR1\*

QC:

Date:

SPC (Y/N):

Date:

Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr

Revision Nbr

D206-667-141

Rev C (DEO)

DSI9565

A

100

0.00

\*100\*

DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy bluefile and create labels as per PPP D206-667-101 CHG004

110

0.00

\*110\*

Packaging

Packaging

Memo

0.00

Packaging

P10 →

W/O: 75948		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D206-667-101 PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes ☐ No ☒ DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
12.02.24	120	CRUSHING IS OVER to l. L.C. Process	CP 12.02.23 PS/042	Acceptable The will fail at support before location of high crushing	n/a 12/02/20	CP 12.02.23 PS/042		

NOTE: Date & initial all entries

**Work Order ID 75948****\*75948\***

Page 2

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**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Crosstube Fwd

Start Date: 02/11/2011 Start Qty: 1.00

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Cust Item ID:

Required Date: 22/11/2011 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	BENDING MACHINE - CROSSTUBES	0.00							
<b>*120*</b>									
CNC Bend 1	Memo	0.00							
CNC Delta 100 Bender	Bend tube as per Dwg D206-667-141 using CNC bender program 206B-fw and Folio FT _____								
130	QC15- Crosstube Dimensional Check	0.00							
<b>*130*</b>									
QC	Memo	0.00							
Quality Control									

JW  
mo

12-2-23

JP  
12.02.24

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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**NOTE:** Date & initial all entries

# Work Order ID 75948

**\*75948\***

Page 3

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Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Crosstube Fwd

Start Date: 02/11/2011 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 22/11/2011 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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140

0.00

**\*140\***

Crosstubes

0.00

Crosstubes

Crosstubes

## Memo

1-Drill holes & ream using drill Jig DT8541 & DT8542 as per Dwg D206-667-141. Drill all (3) top holes.

3-Flip tube and switch drilling Jigs from right to left, left to right. Locate Jigs off existing holes using "T" pins.

4-Drill pilot holes using drill Jig DT8541 & DT8542 as per Dwg D206-667-141. Drill only the top (2) holes.

5-Drill pilot holes as per Dwg D206-667-141. Drill only the top (2) holes.

6-Drill Fwd rivet holes using drill Jig DT8787FWD as per Dwg D206-667-141.  
Note: Fwd side has 3x top holes.

7-Drill Aft rivet holes using drill Jig DT8787AFT as per Dwg D206-667-141.

8-C'sink holes as per Dwg D206-667-141. Allow rivet to sit below surface to compensate for paint.

9-Scribe part # and batch # using vibrating stylus as per Dwg D206-667-141  
Inside of Cuff (Do not engrave on outside of tube)

10-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D206-667-141

POSITIVE RECALL

EFFECTIVE 12-02-23 AUTH *Q45*

RELEASED 12-02-23 DATE *Q4*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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**NOTE:** Date & initial all entries

# Work Order ID 75948

**\*75948\***

Page 4

November-02-11 8:34:51 AM

Item ID: D206-667-101 Accept **\*N900040100\*** Setup Start **\*NS1\***  
 Revision ID: Stop **\*NS2\***  
 Item Name: Crosstube Fwd  
 Start Date: 02/11/2011 Start Qty: 1.00 **\*1\*** Cust Item ID:  
 Required Date: 22/11/2011 Req'd Qty: 1.00 **\*1\*** Customer:  
 Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	Crosstubes Chemical Conversion	0.00							
<b>*150*</b>									
HandFXtube	Memo	0.00							
Hand Finishing Crosstubes									
160	QC3- Inspect Part Finish	0.00							
<b>*160*</b>									
QC	Memo	0.00							
Quality Control									
170	QC5- Inspect part completeness to step on W/O	0.00							
<b>*170*</b>									
QC	Memo	0.00							
Quality Control									

MO

12/2/24

m

12 . 02 . 24 (1)

m

12 . 02 . 24 (1)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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**NOTE:** Date & initial all entries



**Work Order ID 75948****\*75948\***

Page 5

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Item ID: D206-667-101

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**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Crosstube Fwd

Start Date: 02/11/2011 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 22/11/2011 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals:

Process Plan: \_\_\_\_\_

Date: \_\_\_\_\_

Tooling: \_\_\_\_\_

Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_

Date: \_\_\_\_\_

SPC (Y/N): \_\_\_\_\_

Date: \_\_\_\_\_

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180	Outsource process - NDT per QSI038 4.1	0.00							
<b>*180*</b>									
Outsource2	Memo	0.00							
Outsource process - NDT	Liquid Penetrant Inspection as per QSI 038Or Issue P/O 16284 LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order								12-02-27
190	Packaging	0.00							
<b>*190*</b>									
Packaging	Memo	0.00							
Packaging	Ensure copy of NDT results attached to work order.								12/2/28
200	QC5- Inspect part completeness to step on W/O	0.00							
<b>*200*</b>									
QC	Memo	0.00							
Quality Control	Inspect for damage & ensure results are as per Dwg D206-667-103								

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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# Work Order ID 75948

**\*75948\***

Page 7

November-02-11 8:34:51 AM

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 Item Name: Crosstube Fwd  
 Start Date: 02/11/2011 Start Qty: 1.00 **\*1\*** Cust Item ID:  
 Required Date: 22/11/2011 Req'd Qty: 1.00 **\*1\*** Customer:  
 Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
240	QC14- Inspect Spray Paint	0.00							
<b>*240*</b>									
QC	Memo	0.00							① 120228
Quality Control									
250		0.00							
<b>*250*</b>	Crosstubes								
Crosstubes	Memo	0.00							AR 12-2-28
Crosstubes	1-Abrade mating surfaces of support and crosstube with 400 grit sandpaper, clean the area with 4105S wash 'n' wipe								
	2-Install supports with Proseal 890 per DSI9565 and QSI 015 A/R Proseal 890 Batch: <u>120072</u>								
	3- Torque bolts as per dwg								
	3-Install nut plates as per Dwg D206-667-141. Touch-up rivet heads with Imron paint.								

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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**Work Order ID 75948****\*75948\***

Page 8

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Item Name: Crosstube Fwd

Start Date: 02/11/2011 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 22/11/2011 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals:

Process Plan: \_\_\_\_\_

Date: \_\_\_\_\_

Tooling: \_\_\_\_\_

Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_

Date: \_\_\_\_\_

SPC (Y/N): \_\_\_\_\_

Date: \_\_\_\_\_

Stop **\*NR2\***Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

260

QC5- Inspect part completeness to step on W/O

0.00

**\*260\***

QC

Memo

0.00

Quality Control

270

Pick Kit

0.00

**\*270\***

Packaging

Memo

0.00

Packaging

280

QC4- 100% Inspect kits for completeness

0.00

**\*280\***

QC

Memo

0.00

Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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# Work Order ID 75948

**\*75948\***

Page 9

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Revision ID:

Item Name: Crosstube Fwd

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Start Date: 02/11/2011 Start Qty: 1.00

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Cust Item ID:

Required Date: 22/11/2011 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
290	Packaging	0.00							
<b>*290*</b>									
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPP D206-667-101								
	Location: <u>63</u>								
	PPP Rev: <u>        </u>								
300	QC21- Final Inspection - Work Order Release	0.00							
<b>*300*</b>									
QC	Memo	0.00							
Quality Control									

*12/11/11*

*12/13/11*

*ME 120301*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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**NOTE:** Date & initial all entries

# Picklist Print

November-02-11 8:34:55 AM

Page 1

Work Order ID: 75948

**\*75948\***

Parent Item: D206-667-101

**\*D206-667-101\***

Parent Item Name: Crosstube Fwd

Start Date: 02/11/2011

Required Date: 22/11/2011

Start Qty: 1.00

Required Qty: 1.00

## Comments:

IPP Rev:F05.09.01Add holes for compatibility with Bell SkidtubesKJ/JLM  
IPP Rev:G 08-06-03 update as per DSI9415 (ECN1198) DD verified by:ec  
IPP Rev:H 08-07-28 update as per (par 08-013) DD verified by:EC  
IPP Rev J 09.01.06 Per ECN 08-562 EC verified by:DD IPP REV:K  
11.08.05 PER ECN 11-615 DD VERF:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2873-043		Manufactured	No			250	Each	38.0000	2	2			

**\*D2873-043\***

Nut Plate Assembly

\*\*

As 12-2-28

Location	Loc Qty	Loc Code
LG	22	
72644	2	
75010	20	
LG052 79395	16	
73605	16	

D2873-045

Manufactured No

250

Each

31.0000

2

2

**\*D2873-045\***

Nut Plate Assembly

\*\*

As 12-2-28

Location	Loc Qty	Loc Code
LG052 79318	31	
73529	11	
74985	20	

D2891-1

Manufactured No

250

Each

20.0000

2

2

**\*D2891-1\***

2.25 Support

\*\*

As 12-2-28

Location	Loc Qty	Loc Code
LG052 75176	20	
72822	20	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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November-02-11 8:34:55 AM

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**\*75948\***

Parent Item: D206-667-101

**\*D206-667-101\***

Parent Item Name: Crosstube Fwd

Start Date: 02/11/2011

Required Date: 22/11/2011

Start Qty: 1.00

Required Qty: 1.00

D3595-063-395

Manufactured No

250

Each

130.0000

4

4

**\*D3595-063-395\***

RUBBER CUSHION

\*\*

AB 12-2-28

Location

Loc Qty

Loc Code

LG

129

70975

52

743000

77

LG055

1

63368

1

MS20601-AD4W8

Purchased

No

250

Each

249.0000

14

14

**\*MS20601-AD4W8\***

RIVET

\*\*

AB 12-2-28

Location

Loc Qty

Loc Code

LG

100

108521

100

LG051

120450

149

117106

7

117381

3

117979

3

118572

36

119107

100

AN5-30A

Purchased

No

270

Each

62.0000

4

**\*AN5-30A\***

BOLT

\*\*

12/3/11 SP M120717 SP

Location

Loc Qty

Loc Code

ST339

62

117514

9

118451

3

118706

50

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Parent Item: D206-667-101

**\*D206-667-101\***

Parent Item Name: Crosstube Fwd

Start Date: 02/11/2011

Required Date: 22/11/2011

Start Qty: 1.00

Required Qty: 1.00

AN5-32A

Purchased

No

270

Each

219.0000

4

(4)

**\*AN5-32A\***

Bolt

\*\*

M120717

SP

SP

## Location

## Loc Qty

## Loc Code

ST339

219

118422

44

118628

50

118983

25

119328

100

AN5-7A

Purchased

No

270

Each

2,841.000

10

10

**\*AN5-7A\***

Bolt

\*\*

SD

SP

## Location

## Loc Qty

## Loc Code

ST337

15

117313

14

118422

1

ST516

2826

119017

2826

AN960JD516

NAS1149D0563J

Purchased

No

270

Each

0.0000

18

10

18

**\*AN960JD516\***

Washer

\*\*

M118614

12/2/11

SD

SP

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

November-02-11 8:34:55 AM

Work Order ID: 75948

**\*75948\***

Parent Item: D206-667-101

**\*D206-667-101\***

Parent Item Name: Crosstube Fwd

Start Date: 02/11/2011

Required Date: 22/11/2011

Start Qty: 1.00

Required Qty: 1.00

MS21042L5

Purchased

No

270

Each

2,462.000

4

4

\*\*

12/3/11 SP



**\*MS21042L5\***

Nut

Location

Loc Qty

Loc Code

ST300

962

116105

5

116548

53

117441

34

117611

74

118179

496

118910

300

ST518

1500

119109

1500

MS21920-20

Purchased

No

270

Each

80.0000

4

4

\*\*

AL 12-2-28

**\*MS21920-20\***

Clamp (per MIL-DTL-8783C)

Location

Loc Qty

Loc Code

LG050

80

116799

10

118649

20

119386

50

D206-667-101TRN

Manufactured

No

110

Each

2.0000

1

1

\*\*

① JW 12-2-23

**\*D206-667-101TRN\***

Crosstube Turning Detail

Location

Loc Qty

Loc Code

LG003

2

50518

1

50519

1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

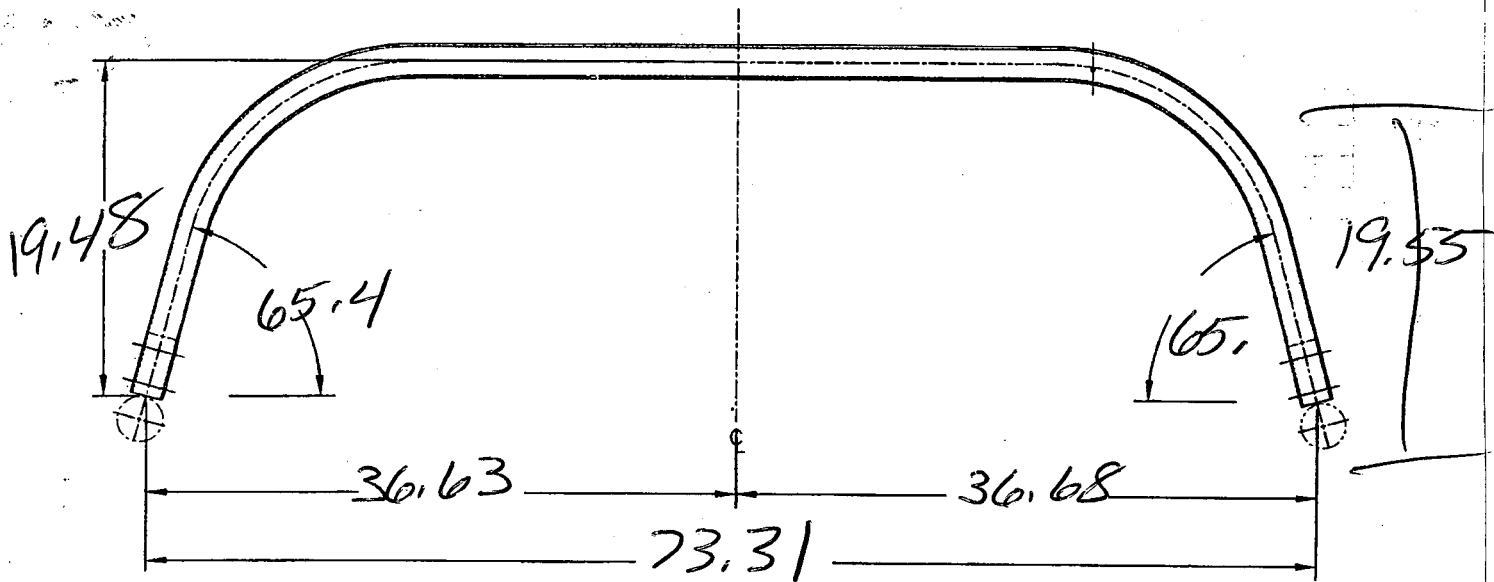
Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

DART AEROSPACE LTD		Work Order:	75948
Description: Crosstube High Fwd (206B)		Part Number:	D206-667-101
Inspection Dwg: D206-667-141 Rev: C		Page 1 of 1	

Required Dimension	Min	Max
Height	19.41	19.67
1/2 Span	36.47	36.73
Angle	65	67
Total Span	72.94	73.46



Comments
Chris P. to co-sign as per Linda L.

QC15 Inspection	DP
Date	12-2-24

Pr2024  
MIN 25 passes.  
CRUSHING 6.7%  
6.7%

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	09.07.30	Dimensions revised per Dwg Rev C	KJ	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Item	Qty -141	Part Number	Description
1	X	D206-667-141	CROSSTUBE ASSEMBLY (206B HIGH FWD)
2	1	D6001-105	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2891-1	SUPPORT
6	4	D3595-063-395	RUBBER CUSHION
7	4	MS21920-20	CLAMP (OR MS21920-21)
8	14	MS20601AD4W8	RIVET (OR NAS9302B-4-8)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)

#### GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6001-105  
FINISHED LENGTH = 93.18±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D206-667-141" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: 11.3 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 12 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2891-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-20 CLAMPS (OR -21) WITH D3595-063-395 RUBBER CUSHIONS TO SECURE THE D2891-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS ARE LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 75948

DEO ATTACHED

OCW#11-615  
11.07.26

UNDER REVIEW

RELEASED  
08/11/12/14

C	REVISE GENERAL NOTES/PART LIST (ZN D7-1); REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS. D3595-063-395 WAS D2856-400-694 (ZN D6-2 & A5-2); REMOVED REF. & ADD TOLERANCES (ZN C4-3, C5-3 & D3-3); RELOCATED FLAG #6 (ZN A8-3) PER NCR 210; MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4.	RF	08.11.06
B	ADD HOLES AND NUT PLATES FOR COMPATABILITY WITH BHT/AA SKUDTUBES	PH	05.07.26
A	NEW ISSUE	CP	00.11.17
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF	DRAWING NO.	REV. C
CHECKED	RF	D206-667-141	SHEET 1 OF 4
MFG. APPR.	RF	TITLE	SCALE
APPROVED	RF	CROSSTUBE ASSY (206B HIGH FWD)	NTS
DE APPR.	RF	COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE, OR COPIED OR TRANSMITTED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	
DATE	08.11.06		

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

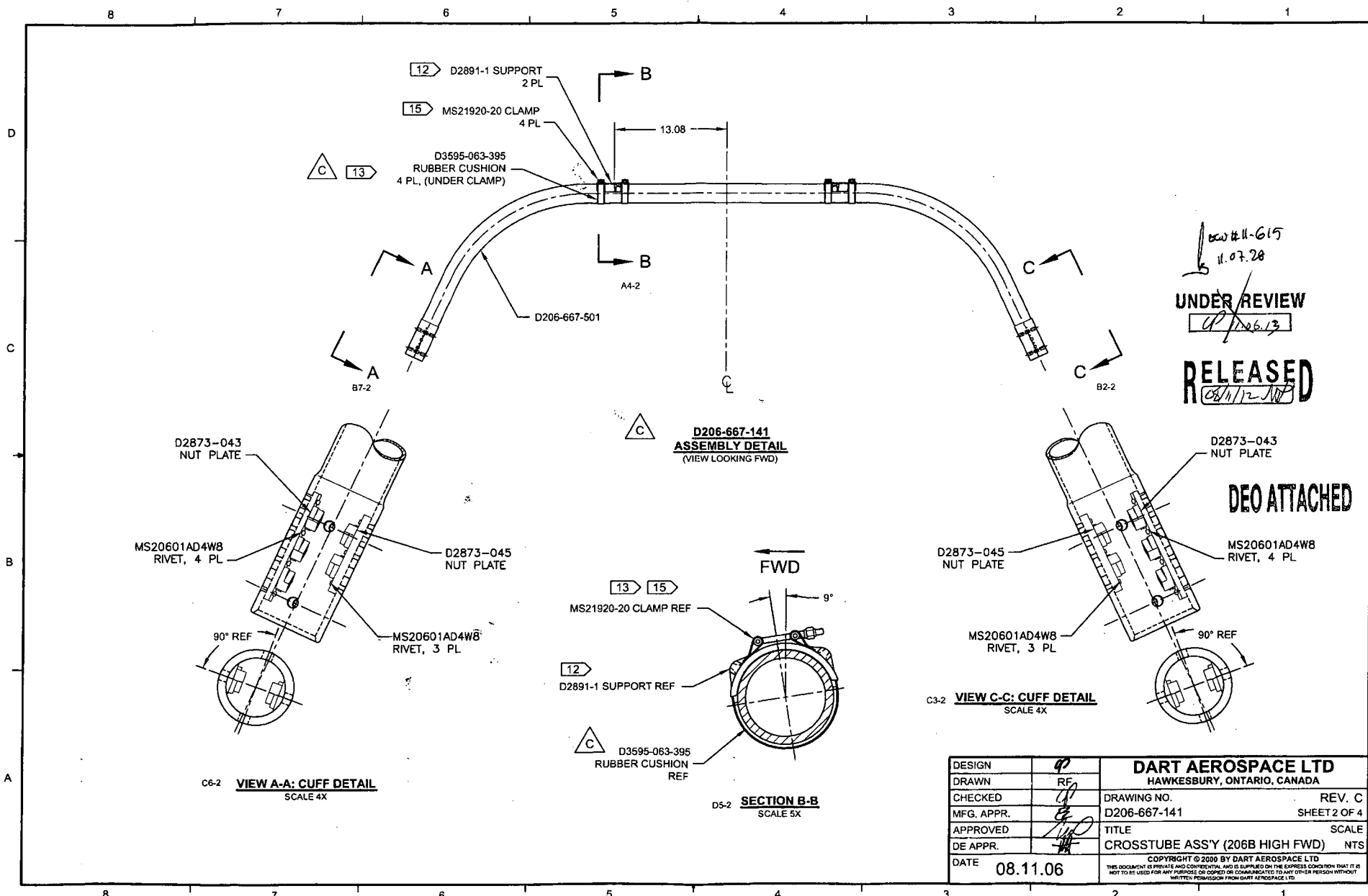
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

75948



UNDER REVIEW  
RELEASED

DEO ATTACHED

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF	DRAWING NO.	REV. C
CHECKED	RF	D206-667-141	SHEET 2 OF 4
MFG. APPR.	RF	TITLE	SCALE
APPROVED	RF	CROSSTUBE ASS'Y (206B HIGH FWD)	NTS
DE APPR.	RF	COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	
DATE	08.11.06		

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

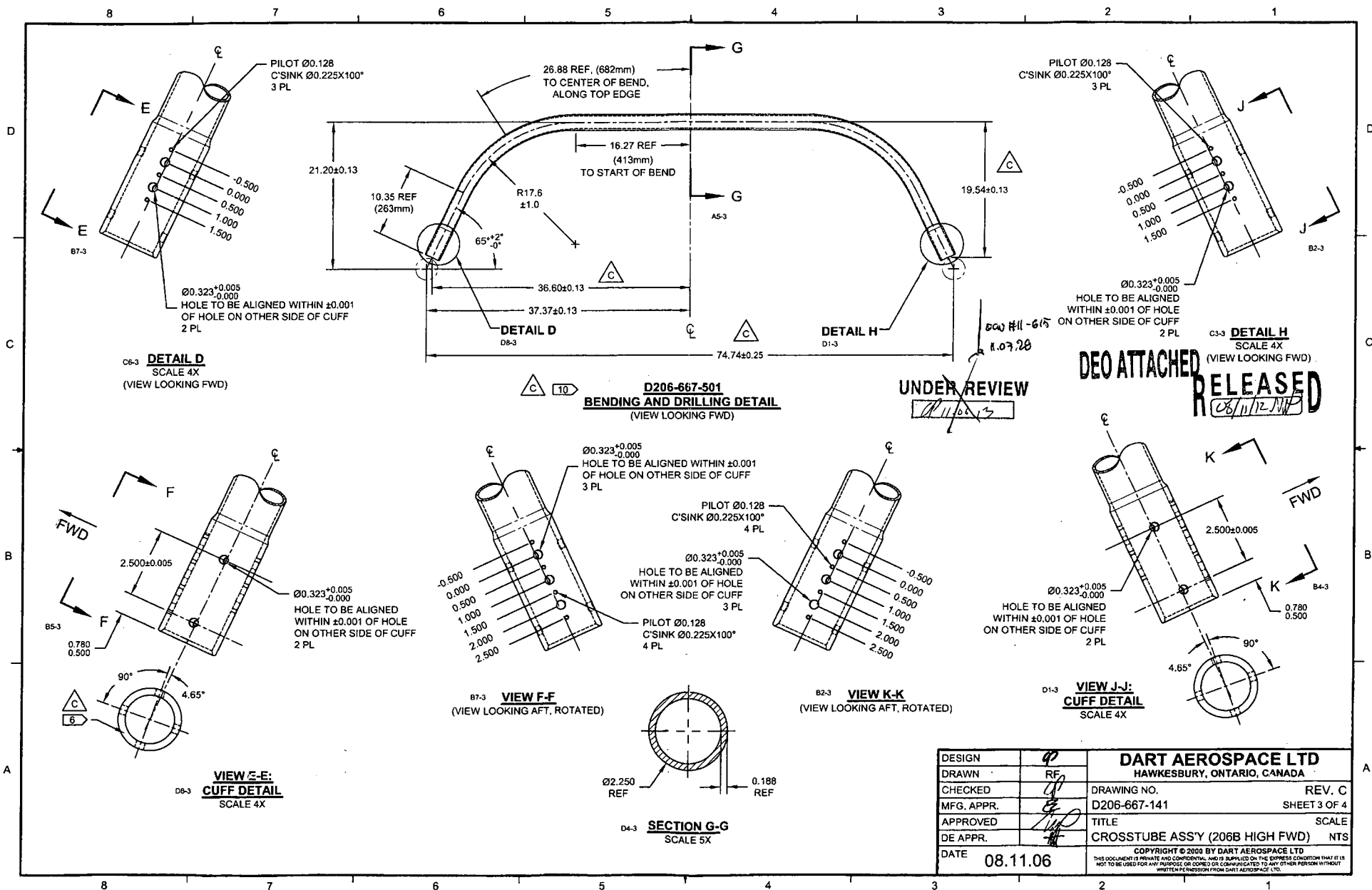
Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



75948



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

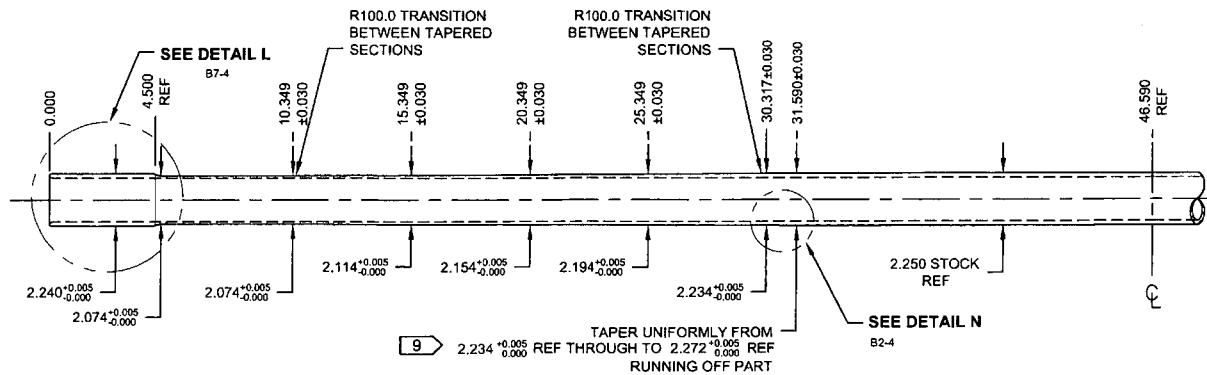
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Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

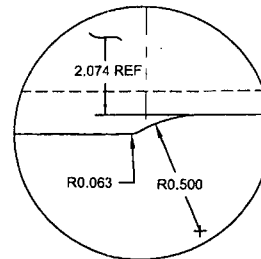
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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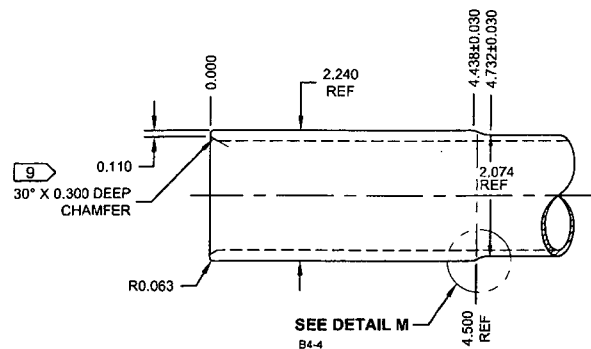
75948



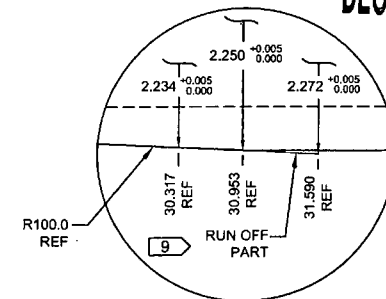
**TURNING DETAIL**



**DETAIL M:  
CUFF TRANSITION**  
A5-4 NOT TO SCALE



**DETAIL L:  
CROSSTUBE CUFF**  
D7-4 NOT TO SCALE



**DETAIL N:  
TAPER RUN-OFF**  
C4-4 NOT TO SCALE

BCW#11-615  
11.09.18

UNDER REVIEW

DEO ATTACHED

RELEASED  
08/11/12

DESIGN	9	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	9	DRAWING NO.	REV. C
MFG. APPR.	9	D206-667-141	SHEET 4 OF 4
APPROVED	9	TITLE	SCALE
DE APPR.	9	CROSSTUBE ASS'Y (206B HIGH FWD)	NTS
DATE	08.11.06	COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR DISCLOSED OR REPRODUCED IN ANY MANNER WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

75948

DRAWING NO. D206-667-141	TITLE CROSSTUBE ASS'Y (206B HIGH FWD)	REV. C	<b>DART AEROSPACE LTD ENGINEERING ORDER</b>		D.E.O. NO. D206-667-141-C-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>Q</i>	CHECKED <i>ASS</i>	MFG. APPR. <i>JD</i>	APPROVED <i>MD</i>	DE APPR. <i>MD</i>			
DATE 11.07.15	DATE 11.07.20	DATE 11.07.21	DATE 11/07/21	DATE 11.07.21			

**PURPOSE:**

REPLACE MAGNOBOND WITH PROSEAL.

**CHANGE:****IS:**

Item	Qty -141	Part Number	Description
9	A/R	PROSEAL 890 B-2	SEALANT, AMS-S-8802 CLASS B-2

**WAS:**

9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)
---	-----	----------------	---

NOTE 12 &amp; 15, SHEET 1 IS AMENDED AS FOLLOWS:

**IS:**

- 12) TO INSTALL D2891-1 SUPPORT: ABRASE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.04" TO 0.07" THICK LAYER OF PROSEAL 890 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. **PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.**

**WAS:**

- 12) INSTALL D2891-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

**RELEASED**  
2011-07-28  
*MD*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# LIQUID PENETRANT TEST REPORT

P- 14907

CLIENT	<u>DAT AeroSpace</u>	DATE	<u>FEB 27 2012</u>	PAGE	<u>1</u>	OF	<u>1</u>
ATTENTION	<u>LINDA</u>	ACUREN JOB No.	<u>185-12-0053</u>	TIME	<u>AM</u>	<input checked="" type="checkbox"/>	PM <input type="checkbox"/>
ADDRESS	<u>1370 ABERDEEN ST.</u>	PO/NO No.	<u>---</u>	WORK LOCATION	<u>HOME</u>		
	<u>ON</u>	ACCEPTANCE STD.	<u>ASTM 1417/051-038</u>	REV./DATE	<u>2008</u>		
PROJECT	<u>F.P.I. on CROSS TUBES</u>						
ITEM(S) EXAMINED	<u>(8) CROSS TUBES</u>						

JOB DESCRIPTION	PROCEDURE No. <u>LT-002</u>	REV./DATE <u>2008</u>	TECHNIQUE No. <u>LT-002</u>	REV./DATE <u>2008</u>	
PART No.	<u>SEE RESULTS</u>	MATERIAL	<u>Aluminum</u>	THICKNESS	<u>Various</u>
SCOPE	<u>A DET FLUORESCENT LIQUID PENETRANT INSPECTION WAS CONDUCTED ON THE EXTERNAL AREA.</u>				

TEST DETAILS								
METHOD	<input checked="" type="checkbox"/> FLUORESCENT	<input type="checkbox"/> VISIBLE	<input checked="" type="checkbox"/> WATER WASH	<input type="checkbox"/> SOLVENT REMOVABLE	<input type="checkbox"/> POST EMULSIFIED			
FAMILY BRAND	<u>DAVIDSON</u>		BLACK LIGHT S/N	<u>16459</u>	<input type="checkbox"/> OUTPUT > 1000 $\mu$ W/cm <sup>2</sup>	<input type="checkbox"/> AMBIENT < 2 fc		
PENETRANT	<u>2407</u>	MINIMUM DWELL TIME	<u>45</u>	MIN.	LIGHTING EQUIP.	<input type="checkbox"/> FLASHLIGHT <input type="checkbox"/> TROUBLELIGHT <input type="checkbox"/> OUTPUT > 100 fc @ SURFACE		
PENETRANT REMOVER	<u>120</u>	MINIMUM DRY TIME	<u>&gt;10</u>	MIN.	OTHER	<u>LAB NO</u>		
DEVELOPER	<u>54052</u>	MINIMUM DWELL TIME	<u>10</u>	MIN.	LIGHT METER S/N	<u>10988 60</u>	CAL DUE DATE	<u>JUN 27 2012</u>
DEVELOPER TYPE	<input type="checkbox"/> NON AQUEOUS	<input checked="" type="checkbox"/> AQUEOUS	<input type="checkbox"/> DRY					

TEST SURFACE					
SURFACE CONDITION	<input type="checkbox"/> AS GROUND	<input type="checkbox"/> AS WELDED	<input type="checkbox"/> MACHINED	<input type="checkbox"/> SHOT BLASTED	<input checked="" type="checkbox"/> CLEAN BARE METAL
SURFACE TEMPERATURE	<input type="checkbox"/> < -4°C/ 20°F	<input type="checkbox"/> -4°C/ 20°F TO 10°C/50°F	<input checked="" type="checkbox"/> 10°C/50°F TO 52°C/125°F	<input type="checkbox"/> > 52°C/125°F	

RESULTS-	<input checked="" type="checkbox"/> METRIC <input type="checkbox"/> IMPERIAL																								
<table><tr><td>1</td><td>CROSS TUBE W.O.# 75949</td><td>✓</td></tr><tr><td>1</td><td>CROSS TUBE W.O.# 75948</td><td>✓</td></tr><tr><td>1</td><td>CROSS TUBE W.O.# 75388</td><td>✓</td></tr><tr><td>1</td><td>CROSS TUBE W.O.# 79387</td><td>✓</td></tr><tr><td>1</td><td>CROSS TUBE W.O.# 80135</td><td>✓</td></tr><tr><td>1</td><td>CROSS TUBE W.O.# 80134</td><td>✓</td></tr><tr><td>1</td><td>CROSS TUBE W.O.# 77538</td><td>✓</td></tr><tr><td>1</td><td>CROSS TUBE W.O.# 77537</td><td>✓</td></tr></table>		1	CROSS TUBE W.O.# 75949	✓	1	CROSS TUBE W.O.# 75948	✓	1	CROSS TUBE W.O.# 75388	✓	1	CROSS TUBE W.O.# 79387	✓	1	CROSS TUBE W.O.# 80135	✓	1	CROSS TUBE W.O.# 80134	✓	1	CROSS TUBE W.O.# 77538	✓	1	CROSS TUBE W.O.# 77537	✓
1	CROSS TUBE W.O.# 75949	✓																							
1	CROSS TUBE W.O.# 75948	✓																							
1	CROSS TUBE W.O.# 75388	✓																							
1	CROSS TUBE W.O.# 79387	✓																							
1	CROSS TUBE W.O.# 80135	✓																							
1	CROSS TUBE W.O.# 80134	✓																							
1	CROSS TUBE W.O.# 77538	✓																							
1	CROSS TUBE W.O.# 77537	✓																							
<p>→ <u>RESPOND INDICATION</u></p> <p><u>5/2/02/25</u></p>																									

**Scope of Services**  
The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

**Standard of Care**  
In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

SIGNATURES			
CLIENT REPRESENTATIVE	<u>Andrew Sheldon</u>	DTR #	<u>E 65814</u>
TECHNICIAN (SIGNATURE):	<u>[Signature]</u>	REPORT	
NAME (PRINT):	<u>Michael S. Taylor</u>	REVIEWED BY:	
	1 <sup>st</sup> TECHNICIAN	NAME	INITIALS
CGSB LEVEL	<u>F</u> SNT LEVEL <u>F</u>		
CGSB REG. No	<u>0606</u>	CGSB LEVEL	<u>---</u> SNT LEVEL <u>---</u>
		CGSB REG. No	<u>---</u>

WHITE - CLIENT COPY

CANARY - OFFICE COPY

PINK - TECHNICIAN COPY

GOLD - OFFICE COPY